CLAIMS

What is claimed is:

1.   A method for processing input/output request packets (IRPs) directed to Data Volumes having a meta-data extent and at least one data extent, the method comprising the steps of:

initiating an IRP;

directing the IRP to a volume filter of an appropriate meta-data extent; and

redirecting the IRP from the meta-data extent to at least one appropriate data extent associated with the meta-data extent.

2.   The method of claim 1 wherein the IRP is initiated by an originator of input/output (I/O).

3.   The method of claim 2 wherein the originator of I/O is a Small Computer System Interface Target Mode Driver (SCSITMD).

4.   The method of claim 1 wherein the meta-data extent is associated with a plurality of data extents.

5.   The method of claim 4 wherein the plurality of data extents are located on a plurality of physical disks.

6.   The method of claim 1 wherein the IRP is redirected from the meta-data extent to a plurality of data extents associated with the meta-data extent.

7.   The method of claim 1 wherein the redirected IRP is a plurality of IRPs corresponding in number to the number of data extents affected by the IRP.

8.   The method of claim 1 wherein the meta-data extent and at least one data extent are Basic Volumes and the method is implemented above said Basic Volumes.

9.   A method for storing data across at least one physical disk and presenting the data as a single virtual disk, comprising the steps of:

forwarding a first input/output request packet (IRP) from an originator of I/O to a meta-data extent associated with at least one data extent of a Data Volume;

intercepting the first IRP in a volume filter of the meta-data extent;

creating an additional IRP for each data extent affected by the first IRP;

transmitting the additional IRPs to each data extent affected by the first IRP; and

allowing the additional IRPs to pass through a volume filter of each data extent affected by the first IRP.

10.   The method of claim 9 wherein the meta-data extent is associated with a plurality of data extents.

11.   The method of claim 10 wherein the data extents are located on separate physical disks.

12.   The method of claim 10 wherein the data extents affected by the first IRP are located on separate physical disks.

13. The method of claim 11 wherein the meta-data extent and data extents are Basic Volumes and the method is implemented above said Basic Volumes.

14. A computer system for providing Data Volumes comprising:

a plurality of storage clients connected to at least one storage server across a computer network;

a plurality of magnetic disks wherein Data Volumes may be created and virtually presented to said storage clients, each of said Data Volumes having a meta-data extent and at least one data extent; and

a central management facility for controlling the at least one storage server.

15. The computer system of claim 14 wherein the computer network is a fibre channel network.

16. The computer system of claim 14 wherein each storage client is presented with a virtual disk including at least one Data Volume having a meta-data extent and at least one data extent.

17. The computer system of claim 16 wherein the meta-data extent includes a volume filter adapted to redirect input/output request packets (IRPs) received from the storage client to the at least one data extent.

18.   The computer system of claim 17 wherein the at least one data extent is a plurality of data extents and the IRPs are redirected to the data extents based on which data extents are affected by the IRPs.

19.   The computer system of claim 14 wherein each storage client is presented with a particular Data Volume including a meta-data extent and at least one data extent.

20.   The computer system of claim 19 wherein the Data Volume is a simple volume.

21.   The computer system of claim 19 wherein the Data Volume is a spanned volume.

22.   The computer system of claim 21 wherein the Data Volume includes at least three Basic Volumes and a volume filter is logically disposed above said Basic Volumes.

23.   A volume filter for redirecting input/output request packets (IRPs) sent from an input/output (I/O) originator, the volume filter comprising:

    means for intercepting IRPs sent to a meta-data extent associated with a Basic Volume and redirecting the IRPs to at least one data extent associated with at least one other Basic Volume wherein a plurality of data extents are associated with an equal number of Basic Volumes.

24. The volume filter of claim 23 wherein the plurality of data extents includes data extents located on separate physical disks.

25. The volume filter of claim 24 wherein the volume filter is logically disposed above the Basic Volumes.